Ordering number: EN 2906A



Monolithic Linear IC

No.2906A

LA7116

VCR Servo Interface

The LA7116 is a VCR servo interface IC that can be used in conjunction with the LC7412, 7413 to form a servo system with a good cost performance.

Functions

- Drum FG amp
- Capstan FG amp
- CTL amp
- Drum PG amp
- OP amp × 2

Features

- The OP amp section can be operated from a voltage of up to 12V.
- Selectable threshold voltage of CLT Schmitt section

Maximum Ratings at Ta = 25°C

				unit
Maximum Supply Voltage	V_{CC} 1		7.0	V
	V_{CC} 2		15.0	V
Allowable Power Dissipation	Pd max	Ta≦65°C	200	mW
Operating Temperature	Topr		−15 to +65	°C
Storage Temperature	Tstg		−40 to +125	°C

Operating Conditions at Ta = 25°C

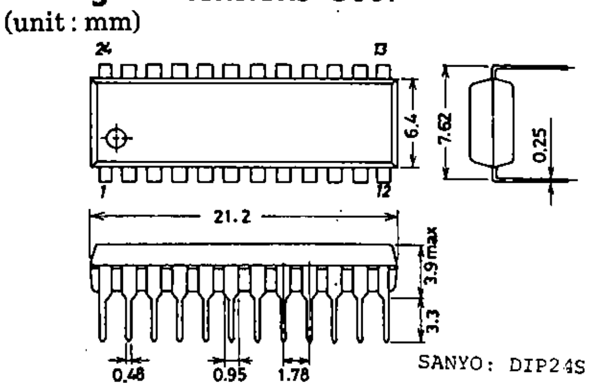
			unit
Recommended Supply Voltage	V_{CC}	5.0	V
Operating Voltage Range	V_{CC} op1	4.5 to 5.5	V
	V_{CC} op2	4.5 to 13.0	V

Operating Characteristics at Ta = 25°C, V_{CC} = 5V

			min	typ	max	unit
Circuit Current	I_{CC} 1	Quiescent, no load	2.0	4.0	6.0	mA
CTL Amp Bias Voltage	V_5	Quiescent, no load	2.4	2.5	2.6	V
PG Amp Bias Voltage	V_{15}	Quiescent, no load	2.4	2.5	2.6	V
PG Amp Bias Voltage	V_{16}	Quiescent, no load	2.4	2.5	2.6	V
	V_{21}	Quiescent, no load	2.4	2.5	2.6	V
Reference Voltage	V_{20}	Quiescent, no load	2.4	2.5	2.6	V

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Package Dimensions 3067
(unit : mm)

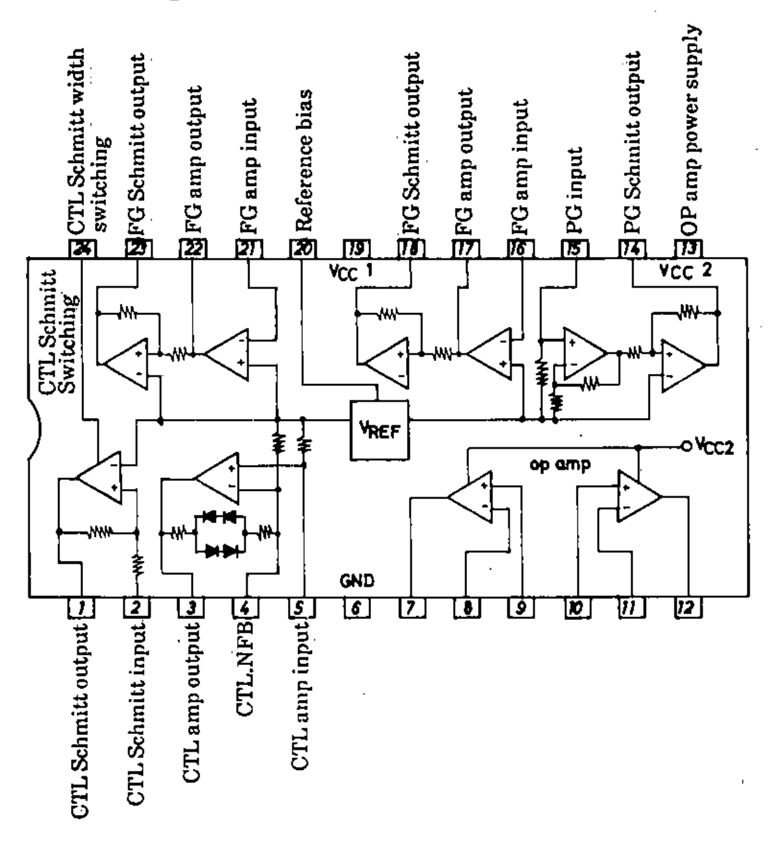


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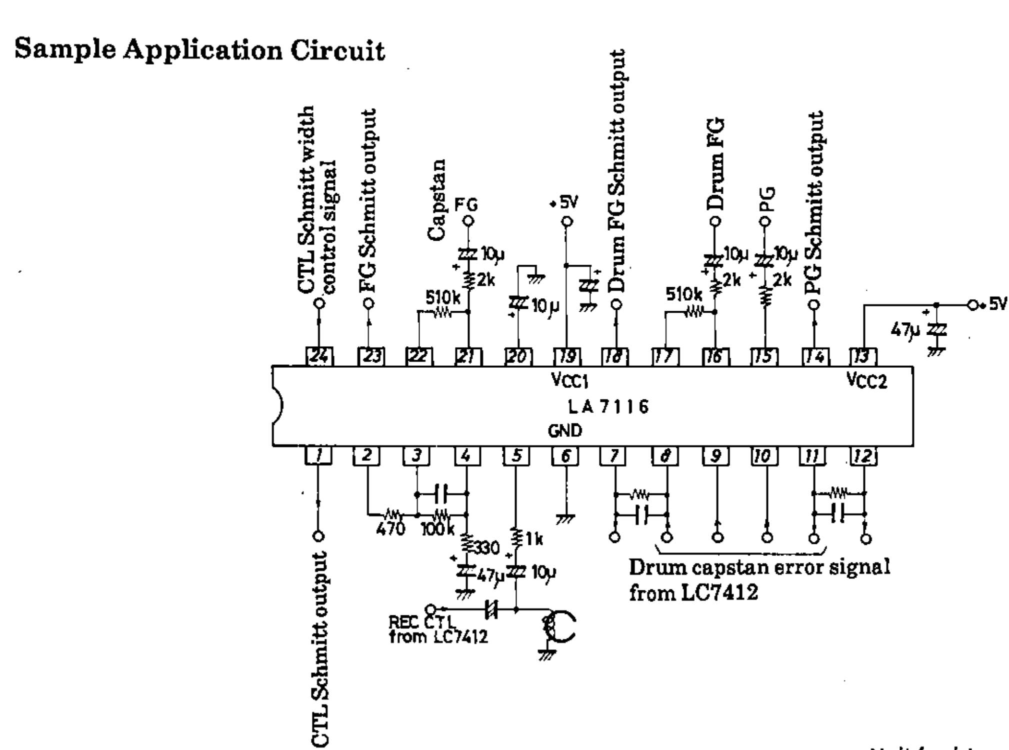
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			min	typ	max	unit
CTL Output Voltage	V_{OHCTL}	$I_1 = +0.5mA$	4.0			V
	V_{OLCTL}	$I_1 = -0.5mA$			1.0	V
PG Output Voltage	V_{OHPG}	$I_{14} = +0.5mA$	4.0			V
	V_{OLPG}	$I_{14} = -0.5mA$			1.0	V
FG Output Voltage	V_{OHFG1}	$I_{18} = +0.5mA$	4.0			V
	V_{OLFG1}	$I_{18} = -0.5mA$			1.0	V
	V_{OHFG2}	$I_{23} = +0.5mA$	4.0			V
	V_{OLFG2}	$I_{23} = -0.5mA$			1.0	V
CTL Amp Gain	G_{CTL}	SG1:500Hz,1Vp-p,V_3=1Vp-p	48	50	52	dB
CTL Amp Frequency Characteristic	ΔG_{CTL}	SG1:10Hz,1Vp-p,V_3=1Vp-p	−6	−2		dB
FG Amp Gain	G_{FG1}	SG3:500Hz,1Vp-p,V_{17}=1Vp-p	46	48	50	dB
	G_{FG2}	SG4:500Hz,1Vp-p,V_{22}=1Vp-p	46	48	50	dB
FG Amp Frequency Characteristic	ΔG_{FG1}	SG3:20kHz,1Vp-p, V_{17}=1Vp-p	−10	−6		dB
	ΔG_{FG2}	SG4:20kHz,1Vp-p, V_{22}=1Vp-p	−10	−6		dB
PG Schmitt Width	V_{HPG}	SG2:500Hz	48	60	72	mVp-p
FG Schmitt Width	V_{HFG1}	SG3:500Hz	185	230	275	mVp-p
	V_{HFG2}	SG4:500Hz	185	230	275	mVp-p
CTL Schmitt Width	V_{HCTL1}	SG1:500Hz,S1=a	160	200	240	mVp-p
CTL Schmitt Width (Search)	V_{HCTL2}	SG1:500Hz,S1=b	320	400	480	mVp-p
CTL Schmitt Width (Slow)	V_{HCTL3}	SG1:500Hz,S1=c	+72	+92	+112	mV
CTL Schmitt Width (Slow)	V_{HCTL4}	SG1:500Hz,S1=c	+34	+54	+70	mV
CTL Schmitt Width Switching Level	V_{24H}	S1=d	3.0	3.5	4.0	V
	V_{24L}	S1=d	1.0	1.5	2.0	V
[OP Amp Characteristics] at V_{CC}=5 to 12V						
Circuit Current	$I_{CC}2$		0.3	0.8	1.2	mA
Input Offset Voltage	$V_{IO}1$			±2	±7	mV
	$V_{IO}2$			±2	±7	mV
Input Offset Current	$I_{IO}1$			±5	±50	nA
	$I_{IO}2$			±5	±50	nA
Input Bias Current	I_B1			45	250	nA
	I_B2			45	250	nA
Output Current (Souce)	$I_{OSOC}1$		10			mA
	$I_{OSOC}2$		10			mA
Output Current (Sink)	$I_{OSNK}1$		10			mA
	$I_{OSNK}2$		10			mA
Common-Mode Input Voltage Range	V_{1CM}		0	V_{CC} to 1.5		V
Output Voltage Range	V_{OUT}		0	V_{CC} to 1.5		V

Equivalent Circuit Block Diagram



Sample Application Circuit



Unit (resistance : Ω , capacitance : F)